# SPEC® CINT2006 Result

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## NEC Corporation

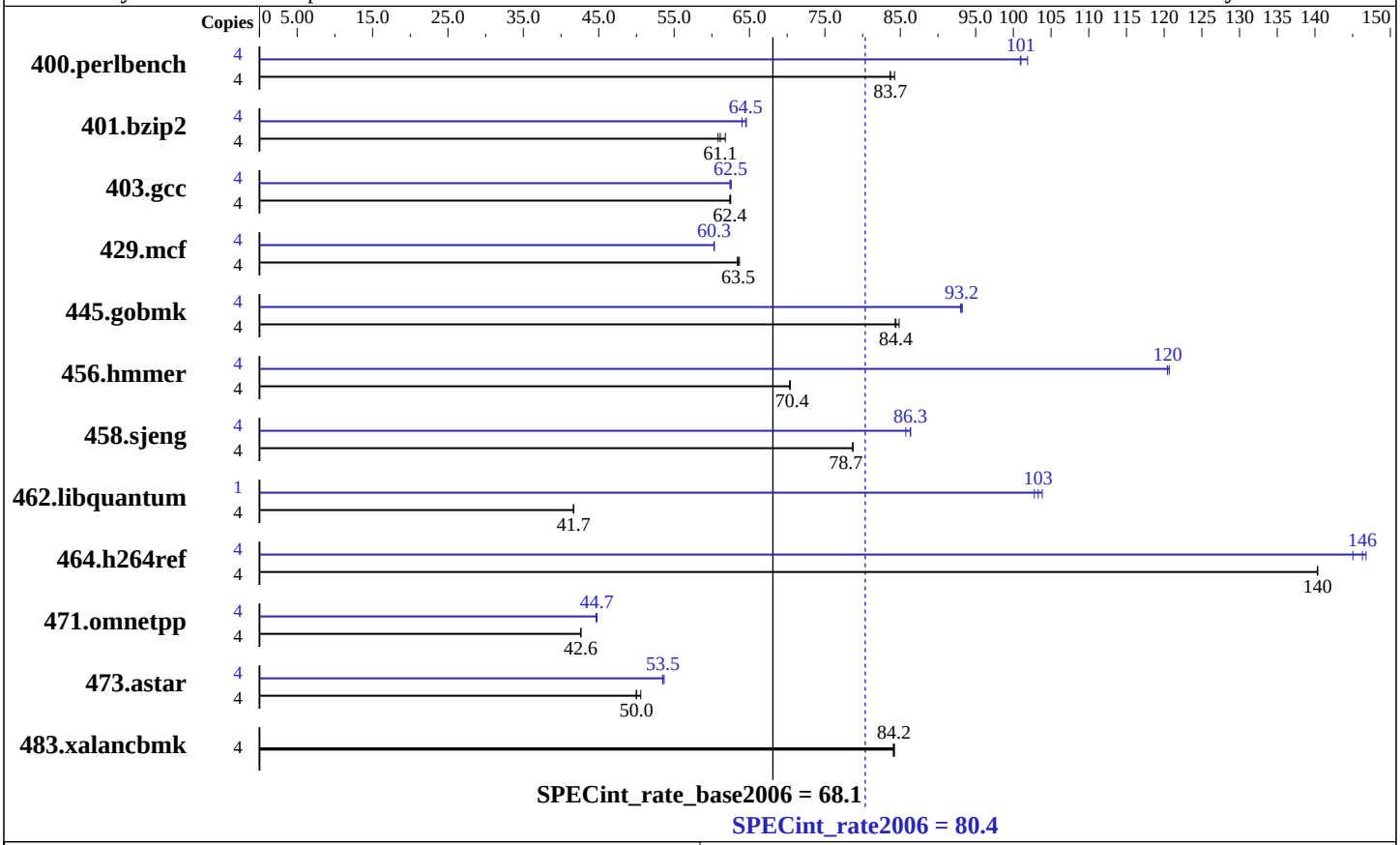
Express5800/120Bb-6
(Intel Xeon X5260)

**SPECint®_rate2006 = 80.4**

**SPECint_rate_base2006 = 68.1**

**CPU2006 license:** 9006
**Test sponsor:** NEC Corporation
**Tested by:** NEC Corporation

**Test date:** Feb-2008
**Hardware Availability:** Feb-2008
**Software Availability:** Nov-2007




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon X5260 |
| CPU Characteristics: | 3.33 GHz, 6 MB L2, 1333 MHz bus |
| CPU MHz: | 3333 |
| FPU: | Integrated |
| CPU(s) enabled: | 4 cores, 2 chips, 2 cores/chip |
| CPU(s) orderable: | 1,2 chips |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 6 MB I+D on chip per chip |
| L3 Cache: | None |
| Other Cache: | None |
| Memory: | 8 GB (4x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC) |
| Disk Subsystem: | 1x73.2 GB SAS, 10000RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp |
| Compiler: | Intel C++ Compiler for Linux32 and Linux64 version 10.1 Build 20070913 Package ID: l_cc_p_10.1.008 |
| Auto Parallel: | Yes |
| File System: | ext2 |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 32-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | MicroQuill SmartHeap library 8.1 binutils-2.17.tar.gz, Version 2.17 |

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## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 4 | **467** | **83.7** | 467 | 83.7 | 464 | 84.2 | 4 | 387 | 101 | **387** | **101** | 384 | 102 |
| 401.bzip2 | 4 | 635 | 60.8 | **632** | **61.1** | 625 | 61.8 | 4 | 603 | 64.0 | 598 | 64.6 | **598** | **64.5** |
| 403.gcc | 4 | 516 | 62.4 | 515 | 62.5 | **516** | **62.4** | 4 | 516 | 62.4 | **515** | **62.5** | 515 | 62.6 |
| 429.mcf | 4 | 575 | 63.4 | 573 | 63.7 | **574** | **63.5** | 4 | 605 | 60.3 | **605** | **60.3** | 604 | 60.4 |
| 445.gobmk | 4 | 495 | 84.8 | 498 | 84.3 | **497** | **84.4** | 4 | **450** | **93.2** | 450 | 93.2 | 451 | 93.0 |
| 456.hmmer | 4 | 531 | 70.3 | 530 | 70.4 | **530** | **70.4** | 4 | 309 | 121 | **310** | **120** | 310 | 120 |
| 458.sjeng | 4 | 615 | 78.7 | 615 | 78.7 | **615** | **78.7** | 4 | 560 | 86.4 | 565 | 85.7 | **561** | **86.3** |
| 462.libquantum | 4 | 1990 | 41.7 | 1989 | 41.7 | **1989** | **41.7** | 1 | 200 | 104 | 202 | 103 | **201** | **103** |
| 464.h264ref | 4 | 631 | 140 | **631** | **140** | 631 | 140 | 4 | 610 | 145 | 603 | 147 | **605** | **146** |
| 471.omnetpp | 4 | **586** | **42.6** | 587 | 42.6 | 586 | 42.6 | 4 | **559** | **44.7** | 559 | 44.7 | 560 | 44.6 |
| 473.astar | 4 | **562** | **50.0** | 555 | 50.6 | 562 | 50.0 | 4 | 525 | 53.5 | 523 | 53.7 | **525** | **53.5** |
| 483.xalancbmk | 4 | 328 | 84.1 | **328** | **84.2** | 328 | 84.2 | 4 | 328 | 84.1 | **328** | **84.2** | 328 | 84.2 |

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
 OMP_NUM_THREADS set to number of cores
```

## General Notes

```
All benchmarks compiled in 32-bit mode except 401.bzip2,
456.hmmer, for peak, are compiled in 64-bit mode
```

## Base Compiler Invocation

C benchmarks:
`icc`

C++ benchmarks:
`icpc`

## Base Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
462.libquantum: `-DSPEC_CPU_LINUX`
483.xalancbmk: `-DSPEC_CPU_LINUX`

## Base Optimization Flags

C benchmarks:
`-fast -inline-calloc -opt-malloc-options=3`

C++ benchmarks:
`-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs`
`-L/opt/SmartHeap_8.1/lib -lsmartheap`

## Base Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

## Peak Compiler Invocation

C benchmarks (except as noted below):
`icc`

401.bzip2: `/opt/intel/cce/10.1.008/bin/icc`
`-L/opt/intel/cce/10.1.008/lib`
`-I/opt/intel/cce/10.1.008/include`

456.hmmer: `/opt/intel/cce/10.1.008/bin/icc`
`-L/opt/intel/cce/10.1.008/lib`
`-I/opt/intel/cce/10.1.008/include`

C++ benchmarks:
`icpc`

## Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
401.bzip2: `-DSPEC_CPU_LP64`
456.hmmer: `-DSPEC_CPU_LP64`
462.libquantum: `-DSPEC_CPU_LINUX`
483.xalancbmk: `-DSPEC_CPU_LINUX`

## Peak Optimization Flags

C benchmarks:

Continued on next page

# Peak Optimization Flags (Continued)

400.perlbench: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -ansi-alias -prefetch`

401.bzip2: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -prefetch`

403.gcc: `-fast -inline-calloc -opt-malloc-options=3`

429.mcf: `-fast -prefetch`

445.gobmk: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xT -O2 -ipo -no-prec-div -ansi-alias`

456.hmmer: `-fast -unroll2 -ansi-alias -opt-multi-version-aggressive`

458.sjeng: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll4`

462.libquantum: `-fast -unroll4 -Ob0 -prefetch -opt-streaming-stores always -vec-guard-write -opt-malloc-options=3 -parallel -par-runtime-control`

464.h264ref: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -ansi-alias`

C++ benchmarks:

471.omnetpp: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xT -O3 -ipo -no-prec-div -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap`

473.astar: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xT -O3 -ipo -no-prec-div -ansi-alias -opt-ra-region-strategy=routine -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap`

483.xalancbmk: `basepeak = yes`

# Peak Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-INT-ia32-linux-flags.20090714.00.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-INT-ia32-linux-flags.20090714.00.xml`

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